

ABSTRACT

A monitor that has multiple ionization sources that can be switched between different modes. The monitor may have an electrostatic ionizer and a photoionizer that ionize at approximately atmospheric pressure. Activation of the ionizers is controlled by a switch. The switch can activate the ionizers in accordance with a plurality of modes. For example, the switch may create modes where the ionizers are activated sequentially or simultaneously. The monitor may further have a chemical ionizer that is controlled by the switch to activate in a plurality of modes. The modes may be switched to detect different trace molecules of a sample loaded into an ionization chamber. The ionizers are preferably located at orthogonal angles relative to each other.